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ME-EM eNewsBrief, December 2014

Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University

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ME-EM

Michigan Tech

eNewsBrief

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Greetings from William (Bill) Predebon, Chair, Department of Mechanical Engineering-Engineering Mechanics at Michigan Tech. For the latest news and info about our faculty, students and staff, please visit our website at www.mtu.edu/mechanical. Visit us on Facebook, [MEEM](#). Click on the support our future icon to see ways to support the ME-EM Department.

Upcoming Events

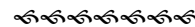


The ME Scholarship Winter Carnival Alumni Hockey Social

Join us on Saturday, February 7, 2015, during Winter Carnival at the Michigan Tech versus Bemidji State hockey game. Enjoy the game in the company of fellow alumni with pizza, hot dogs, soda, beer,



wine, etc. in the Husky Suite South Skybox of the Student Development Complex (SDC). Game start time is 5:07 PM. Cost for this event is \$30 per person with half going to the MEEM Alumni Scholarship and half towards the cost of the ticket. Refreshments are courtesy of the ME-EM Department. Register and pay online with a credit card at [skybox](#). Email Kathy at ka-goulet@mtu.edu or phone 906-487-2 with questions. Space is limited, reply early. Tickets will be at the table at the entrance to the hockey suites on the second floor.



For the 13th straight year, the ME-EM Department, along with the Keweenaw Research Center, will be hosting the

SAE Clean Snowmobile Challenge

on March 2-7, 2015



For more information on this event, please contact the department at 906-487-2551 or email me at wwpredeb@mtu.edu. Sponsorship is always welcome. See more about the event at [snowmobile](#)



The ME-EM Department and Michigan Tech's Corporate Development will co-host the annual **Michigan Tech Alumni Reception** at the SAE International Conference in Detroit, MI the week of April 20th. Information on the reception will be sent in a separate email.

Alumni and Friends News, Accomplishments & Awards

Joe Berger (BSME '04) was profiled on the Viking Age website. Read the article at [Vikings](#). The Twin Cities Pioneer Press sports section also ran several feature articles on Joe. Read about his road to the NFL at [long-shot](#) and [future](#).



(Pioneer Press: Sherri LaRose-Chiglo)

Britta Jost (MSME '04) was hon-

ored by the Society of Women Engineers (SWE) at its annual conference, WE14, in Los Angeles the week of October 20th. She received the SWE Distinguished New Engineer award for "inspiring and leading by example, and for an ability to bring together on the job, in SWE and in the community." Britta is a senior design engineer with Caterpillar and the Tech section's SWE counselor.

Russell Stebbins (BSME '93) has been appointed Director, Automotive Aftermarket, North America at Philips Automotive Lighting.

Philips Lighting is a subsidiary of Royal Philips, located in the Netherlands. As part of the Philips Automotive management team, Russell will be based in Farmington Hills MI. He was previously employed with TRW since 1998 in various management positions.

Chais Eliason (BSME '14) was the subject of an article in the Twin Cities Pioneer Press. Eliason has joined the Hendrick Motorsports team, read the article at [motor-sports](#).



(Steve Kuchera/skchra@duluthnews.com)



University News/Awards

Gov. Rick Snyder has announced the appointments of Brenda Ryan of Commerce Township, and William Johnson of Newaygo to the **Michigan Tech Board of Control**. The eight-person board is the governing body of the University.

Ryan, president and owner of Ryan Industries and Ryan Properties of Wixom, Mich., and Alliance Industries in Springfield, Mo., is a Michigan Tech alumna, where she earned a BS in Metallurgical Engineering. She also earned an MS in Materials Science Engineering from the University of Virginia. She replaces Board of Control member Lenora Ashford, whose term expired on Dec. 31.

Johnson is president and CEO of The Berean Group. He served as chairman, president and CEO of SEMCO Energy, as CEO of Northern Pipeline Construction Co. and as president and CEO of the Gas Service Co. Johnson serves as chair of the Biglari Holdings board of directors. He is a member of The Port City Group board of directors, a member of The Right Place and vice chair of the Fremont Area Community Foundation. Johnson earned a bachelor's and master's degree from Central Michigan University. He replaces Stephen Hicks, whose Board of Control term expired on Dec. 31.

Michigan Tech hockey was featured in the The New York Times on December 17th. See the article at [Times](#).

More than 340 companies were represented at Michigan Tech's fall **career fair**. The event was highlighted on the Bridge website. Read the article at [fair](#).

An other article on STEM careers on the Bridge website referenced Michigan Tech several times. Read the article at [STEM](#).

Governor Rick Snyder proclaimed October STEM (science, technology, engineering and math) Careers Month, the **Michigan STEM Partnership** and challenged employers across the state to do "just one thing" to promote understanding of the many career opportunities in STEM fields and the education required by those jobs. According to Peter Larsen, director of research development, Michigan Tech, a member of the STEM Partnership, is doing their part to meet the challenge with state-supported internships, a booming Career Fair and hands-on outreach programs to get young people thinking about careers in STEM fields. Read the article at [partnership](#).

The Michigan Tech Section of SWE received the international 2014 Outstanding Collegiate Section award.

Faculty/Staff Awards/Accomplishments

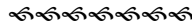
Dr. William Endres (associate professor, ME-EM) had his invention Revocut™ highlighted on the front page of the Engineering newsletter mailed out to every ME in John Deere.



Crain's Detroit Business interviewed **Dr. William Endres** regarding his company Endres Machining Innovations. In the article Dr. Endres states he started "the company in 2005 with the support of the university. The company develops new machines for the cutting-too industry and offers engineering services to customers."



Dr. Nina Mahmoudian (assistant professor, ME-EM) was featured in an article by Matt Roush on Technology Century.com. Roush spent the day touring and interviewing faculty and students at Michigan Tech. His final visit of the day was Dr. Mahmoudian's robotics lab. Read more at [Robot](#).



Dr. Nina Mahmoudian had her work developing teams of robots that can be sent unattended into damaged facilities to detect the power requirements and either reconnect or deliver power from batteries carried on the robots was highlighted on GCN, a website that provides tech news to public-sector IT managers. Read the article at [GCN](#).



Dr. Nina Mahmoudian had her research highlighted in the article "The Next Generation of Electrical Workers: Microgrid Robots" on Microgrid Knowledge. Read the article at [microgrid](#).



Dr. Sheryl Sorby (adjunct professor and professor emeritus, ME-EM) was featured in ASEE Today for her work in engineering education. Read more at [ASEE](#).



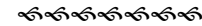
Dr. Reza Shahbazian Yassar (associate professor, ME-EM) had his research on rechargeable batteries highlighted in an article in Science Daily. Read the article at [batteries](#). The research was also featured in the [Michigan Tech News](#).

Department Accomplishments



The Mobile Lab completed an extensive outreach and educational tour this past fall. The lab was setup indoors at the Battery Show in Novi MI, where Dr. Steve Hackney (professor, MSE), Trevor Hassell (instructor, ECE), **Chris Davis (mobile lab operations manager, ME-EM)**, and **Jeremy Worm (mobile lab director & instructor, ME-EM)** provided hands-on seminars to conference and show at-

tendees. From there, **Henry Schmidt (mobile lab operations engineer, ME-EM)** and **Tim Okkema (mobile lab graduate research assistant, ME-EM)** provided educational demonstrations at the Young Urban Intellectual Summit in Detroit. **Dr. Jeffrey Naber (APS Labs Director and professor, ME-EM)**, **Jeremy Worm**, and **Chris Davis** delivered two, two and a half day hands-on professional development courses for John Deere in Dubuque IA. And finally Dr. Steve Hackney, Dr. Wayne Weaver (associate professor, ECE), **John Beard (associate professor, ME-EM)**, **Jeremy Worm**, **Chris Davis**, **Henry Schmidt**, and **Rachel McFarland (mobile lab graduate research assistant, ME-EM)** delivered a weeks worth of hands-on seminars at Ford."



Michigan Tech and the Calumet based firm, REL, Inc. have received a \$2.1 Million three year grant from Southwestern Energy Company to design, fabricate and test a conformable, compressed natural gas tank for use in light-duty trucks. According to **Dr. Gregory Odegard (the Richard and Elizabeth Henes Professor of Computational Mechanics and associate chair and director of undergraduate studies, ME-EM)** "There will be mechanical engineering and materials science students and faculty working together at Tech. Once the tank is fabricated, REL will give it back to us and we'll test it—put it on a pickup truck, mount it, drive it around. REL and Michigan Tech are positioned ideally to develop this tank." Read about it at [REL](#).

Current Contracts and Grants

Ossama Abdelkhalik (PI, ME-EM); "Advanced Control of Wave Energy Converters"; sponsor: Sandia National Laboratories; total award amount: \$50,000.



Chang Kyoung Choi (PI ME-EM) and **Jeffrey Allen (co-PI, ME-EM)**; "Technical Survey on High Efficient Intensive Cooling Control Technolo-

gy"; sponsor: Chung-Ang University; total award amount: \$176,724.



Jeffrey Naber (PI, ME-EM), **Seong Young Lee** and **Mahdi Shahbakhti (co-PIs, ME-EM)**; "Continuation of Ignition Studies Ford Motor Co"; sponsor: Ford Motor Company; total award amount: \$115,000.



Scott A. Miers (PI, ME-EM);

"Emissions Evaluation of a Yamaha Viper with a MPI Turbocharger"; sponsor: Mountain Performance Inc.; total award amount: \$9,576.



Gregory M. Odegard (PI, ME-EM); "Center for Novel High Voltage/Temperature Materials and Structures"; sponsor: Colorado Seminary (University of Denver); total award amount: \$49,176.

CAPSTONE *What the latest? ...*

ORDER

We had another great group of projects conclude this past December. Among them, an energetic group representative of MEEM's finest developed a second-generation product for an individual entrepreneur. BeachFit Wave, which is based on a first generation product, BeachFit, is being marketed on a national and international basis. If you stay at a Ritz-Carlton while on a winter getaway in Puerto Rico or Florida this winter, you may even use this hardware! If you do, please let us know what you think.

I would encourage you to consider becoming a part of this nationally recognized program yourself. For more information contact:

Bob De Jonge
rdejonge@mtu.edu
Office: 906-487-2142
Mobile: 616.780.9379

CAPSTONE
DESIGN PROGRAM

Current Contracts and Grants continued

William W. Predebon (PI, ME-EM), "Torrefied Wood Biofuel"; sponsor: Michigan State University; total award amount: \$2,435.

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**Kazuya Tajiri (PI, ME-EM)**; "Proton Exchange Membrane Characterization at Subzero Temperature"; sponsor: Toyota Motor Corporation; total award amount: \$40,000.

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Kazuya Tajiri (PI, ME-EM); "Study of Two-Phase Flow Behavior in PEMFC Flow Channels"; sponsor: Toyota Motor Corporation; total award amount: \$26,000.

Student Accomplishments/Awards

Marissa Flowers (sr., ME-EM & EBE) is on a Research Internships in Science and Engineering (RISE) in Germany. The program is a highly competitive and internationally recognized program through the US Depart-

ment of State and is in conjunction with the Congress-Bundestag Youth Exchange for Young Professionals program. "As American ambassadors in this program, it is their responsibility to represent our nation, convey their experiences in Germany once they return home, complete language training, study at a German university, intern for a German-speaking workplace and immerse themselves in the community by volunteering. The goal of the program is to strengthen ties between the people of the US and Germany on an individual level." Read the article at [RISE](#).

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**Benjamin Jensen (sr., ME-EM)** was one of four students selected to lead activities at Michigan Tech's Center for Science and Environmental Outreach that coordinated the campus visits of twelve high school students from Greenhills School in Ann Arbor. The group learned about topics ranging from wildlife ecology to remotely-operated vehicles in the classroom. The session was led by Dr. Nancy Auer (professor, Bio Sci), Dr. Joseph Bump

(assistant professor, SFRES), and Hanna Abbots (community liaison specialist, SFRES).

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Football offensive lineman **Josh Knoepke (fr, ME-EM)** and defensive lineman **Jeremy Mims (sr, ME-EM)** earned All-GLIAC Honorable Mention in November.

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**Ryan Lemmens, Seyedmehdi Morazavi Zanjani, Ranjeeth Naik, Ehsan Taheri, and Anqi Zhang (PhD candidates, ME-EM)** were awarded Doctoral finishing Fellowships for the summer semester 2014. See pictures at [fellowships](#)

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Michigan Tech soccer player **Jacqueline Mielke (soph, ME-EM)** was named to the Daktronics All-Midwest Region First Team by the region's sports information directors in November.